

POLICY STATEMENT

Preface

The Houston City Planning Commission's Major Thoroughfare and Freeway Plan has been an effective instrument in guiding the urban and suburban development, and providing mobility and accessibility to a large number of people who reside and work in this general area.

The Houston Major Thoroughfare and Freeway Plan was originally adopted in 1942. It has undergone many refinements since its first publication and is an example for a respected working document that has a daily impact on the growth and development of the city and extraterritorial jurisdiction. This territory of influence, comprises the properties within the Houston city limits, most of the unincorporated area in Harris County, and portions of Fort Bend, Waller, Montgomery, and Liberty Counties. This area includes nearly 2,000 square miles. The MTFP has been generally accepted as the basic guideline for the implementation of major thoroughfare and highway improvements by other governmental agencies within the jurisdiction of the City of Houston, including the State Department of Highways and Public Transportation. The plan therefore has acted for many years as a significant informal catalyst securing close intergovernmental cooperation between those governmental agencies responsible for the implementation of the street and highway network of the greater Houston area.

The Houston City Planning Commission and its Planning Department staff have, for many years, tried to observe certain basic policies and theories related to the administration and implementation of the MTFP. These policies have evolved through usage, and have not been fully reflected in writing or made a part of the Commission's adopted rules related to the approval of land subdivision proposals. With new members of the Planning Commission being appointed, changes personnel in the Planning Department staff, and continued active growth and development in the greater Houston area, it certainly appears timely and appropriate to set forth in writing the theories and policies which guide the members of the Planning Commission and its staff in the administration, refinement and interpretation of the MTFP through the Commission's land subdivision control process, Chapter 42.

Background and Theory

Streets and highways form the basic subdivision of land and represent the framework of the urban structure of any city. It has long been recognized that

cities which suffer from acute traffic congestion, overcrowding of the land with buildings and people, and its citizens experiencing difficulties in accessibility and mobility also suffer acute socio-economic problems and the quality of life and commerce in such cities is often undesirable. Houston is a city where most of its growth and development has occurred in the age of the automobile, and has enjoyed a high degree of mobility dependent upon motor vehicles as the basic mode of transportation. The maintenance of the maximum mobility and accessibility theory is the basis for the Planning Commission's MTFP. Since the adoption of this plan in 1942 and through its many refinements, the plan has been a significant guideline in the formation of the physical characteristics and urban pattern of this city.

Design Concepts

The Planning Commission's MTFP is a graphic illustration of a network of various types of streets and highways which are designated to provide maximum accessibility to all parts of the urban area and facilitate the maintenance of a high level of mobility for its citizens. The MTFP is a melding of four distinct street and highway systems, each of which is implemented by various groups or governmental agencies.

These systems are:

- (1) local streets, laid-out by individual subdividers and developers in conformance to certain governmental standards;
- (2) major thoroughfares, mostly dedicated by individual subdividers and developers, but located in conformance with the general one-mile grid system illustrated on the major thoroughfare plan;
- (3) radial streets and highways, usually existing streets extending radially from the center of the city and within the jurisdiction of either the County or the State Department of Highways and Public Transportation; and
- (4) circumferential highways, implemented by the State Department of Highways and Public Transportation and located at various distances away from and encircling the central area of the city.

Each of these systems plays an important part in the overall roadway network. Particular functions and characteristics of these roadways are described as follows:

A. Local Streets

Local streets provide primary access to adjacent private property and form the basic urban pattern of lots and blocks of land. These streets are generally not continuous for any considerable distance, carrying light traffic, and are planned

to serve individual neighborhoods. They are dedicated and constructed by subdividers and developers in conformance with the policies adopted by the Planning Commission for approval of land subdivision.

B. Major thoroughfare

Major thoroughfares are those streets designed for fast, heavy traffic, and are intended to serve traffic arteries of considerable length and continuity throughout the community. The location of these streets is based on a grid system covering the area within the City's jurisdiction, which provides a theoretical spacing of major thoroughfares at one-mile intervals. This grid system, of course, must be modified to be compatible with various physical features, such as radial highways and railroads, property ownership patterns, topographical conditions and existing developments.

To maximize mobility, streets designated as major thoroughfares generally require a wider right-of-way, typically 100 feet, designed to accommodate dual 2- or 3-lane roadways. They can be separated by an esplanade and can contain protected left-turn lanes at intersections where significant left-turn movement is anticipated.

In general, right-of-way, paving, and drainage for new major thoroughfares are provided by the subdivider or developer as part of the overall subdivision plan approved by the Planning Commission with the alignment of any designated major thoroughfare also being in general conformance with the Commission's MTFP. In some instances, major thoroughfares are constructed by the City or County. There may be a demonstrated need to improve an existing roadway or develop such thoroughfares through property that may not be suitable to subdivide, or when it is desirable to complete a connection between two segments of major thoroughfare. In these cases, the right-of-way and paving standards described above are used as the basis for any public development of major thoroughfares.

C. Radial streets and highways

Radial streets are roadways that extend outward from the central portions of the city in a radial pattern resembling spokes on a wheel. Most of the radial streets and highways represent existing roadways developed some time ago and are usually located in close proximity to mainline railroad rights-of-way. Some radial streets are designated as major thoroughfares, while others are incorporated into the area highway and freeway systems under the jurisdiction of the State Department of Highways and Public Transportation. Radial streets and highways are continuous for long distances and serve not only to supplement the major thoroughfares within the grid, but also carry a high percentage of the commercial long-distance traffic generated in this area.

D. Circumferential highways

Circumferential highways are those traffic arteries designed to circle the city at various intervals moving outward from the city's center. In the Houston metropolitan area, there are four circumferential highways designed as an integral part of the MTFP. The first, is the innermost loop immediately encircling the central business district and incorporating portions of IH 45, IH 10, and US 59. The second circumferential highway is the "Loop", designated as IH 610, which circles the city about 5 miles from the central business district. The third is the "Beltway" and is designated as Beltway 8, which circles the city about 12 miles from the central business district. The fourth circumferential highway is the Grand Parkway, designated as SH 99, which will circle the city about 25-30 miles from the central business district.

These circumferential highways are under the jurisdiction of the State Department of Highways and Public Transportation (portions of Beltway 8 are operated as the Sam Houston Tollway by the Harris County Toll Road Authority) and are being developed to full freeway standards. These roadways provide for long-haul by-pass routes and carry high volumes of traffic as freeway connectors.

Street Hierarchy Classification System

The street hierarchy classification system was developed in response to neighborhood groups wanting more information and better definition for streets designated as thoroughfares on the City of Houston's MTFP. To address this need, the City Council implemented a proposal of assigning a hierarchy classification to street segments according to their function and to their development characteristics of the area. This system incorporated flexibility in assigning classifications dependent on a variety of factors that vary from urban to suburban settings. The hierarchy system uses graduated increases in number of lanes, traffic speeds, and street and right-of-way widths as some methods to accommodate varying levels of traffic demands.

The street hierarchy currently employs classifications of *principal thoroughfare*, *thoroughfare*, *collector*, and *local* street. Principal thoroughfares are designed to carry high volumes of traffic and generally serve corridors of existing or projected heavy commercial or industrial traffic. They are designed to carry more capacity and typically run for longer distances, providing connection between local streets and thoroughfares. Thoroughfares are continuous but not as long as principals and are usually designed to carry lesser volumes of traffic and serve residential and related commercial service areas. Collectors, adopted by City Council as a street category on April 29, 1998, represented the intermediate classification that provides the connection between local streets and thoroughfares. Collectors allow for more flexibility in roadway design and address more issues within

neighborhoods. All other streets are considered local streets that function to provide access from individual properties to the thoroughfare network.

Each hierarchy classification consists of a three-part-code that designates street 1) function, 2) anticipated number of lanes required to meet projected traffic volumes, and 3) the required right-of-way width for the street. An example of the classification system is provided as follows:

P-6-100

P	Street function, either (P)rincipal Thoroughfare, (T)horoughfare, or (C)ollector.
6	Number of lanes to meet projected future traffic volumes
100	Required right-of-way width (feet)

Currently, detailed hierarchy classifications are established only for street segments located within the city limits. Segments in the ETJ are assumed to be thoroughfares with a minimum right-of-way of 100 feet. In a few cases, segments in the ETJ have been designated collectors, which assumes a minimum width of 70 feet.

Adoption and Revision Procedures

A. Code Requirements

Chapter 33, Section 33-22 of the City of Houston's Code of Ordinances authorizes the Planning Commission to prepare and adopt various types of master plans which involve the physical development of the City. The MTFP is one such plan and the Commission is required, prior to the adoption of such a plan or any revision or addition thereto, to hold at least one public hearing. The Commission may adopt all or any part of the plan involved, or any revision, addition or change thereof, by a majority vote of the members of the Commission. The Development Ordinance (#82-1010) requires the Planning Commission to review the plan on an annual basis and after a public hearing submit it to City Council on or before September 1 of each year for their approval.

B. Publication and distribution of the plan

Historically, it has been the policy of the Planning Commission to authorize the publication of this plan and make it available to the general public through the office of the Planning Department upon request. At the present time, the original graphic material for this plan is prepared at a scale of 1" = 6000' and reduced to 1" = 2 miles for the final version which is distributed to the public.

C. Requests for plan revisions

Revisions in the MTFP usually stem from two distinct sources: requests from individual land owners or subdividers to change the alignment of a specific thoroughfare which may affect their proposed development, and requests from other government agencies and staff. Staff recommendations usually involve the correction or resolution of problems caused by some existing development, geographic or topological feature, or other technical matter that was not apparent or considered at the time the original plan was approved. Prior to making its recommendations to the Planning Commission, the Planning Department staff solicits comments regarding the plan from various governmental agencies and interested organizations. The general policy of the Commission and the staff is to make all reasonable efforts to maintain the original integrity of the plan and its basic theory and to keep changes and revisions to a minimum. This policy is necessary to maintain the plan's continuity and to ensure confidence in the plan's long-range implementation by private landowners, developers and subdividers as well as other governmental agencies charged with the responsibility of constructing facilities that are illustrated on the plan.

Interpretation of the plan

A. Problems

The following situations are problems and limitations related to the interpretation of the MTFP and application of the plan to specific individual tracts of land:

1. The area of the Commission's jurisdiction is huge (approximately 2,000 square miles), causing the scale of the plan to be quite small (1" = 2 miles). This small scale, coupled with the fact that some base mapping within the jurisdictional area is not precise, creates a situation where application of the plan to specific individual properties is dependent on the interpretation and judgment of the staff and the Commission. In actuality, if one were to measure the dots indicating the proposed thoroughfares, they would be four to five hundred feet in width. Instead, they should be viewed as "corridors" to be further defined as development occurs. As a result of this situation, the Commission's plan carries the following notation:

"This plan shows general locations only which are subject to modifications to fit local conditions."

This note also recognizes the fact that no plan, however well prepared, can be developed and implemented which does not require continued modification and refinement to reflect the on-going development processes of the city and the territory within its jurisdiction.

2. The use of this plan as a real estate investment tool has caused some difficulties in making modifications to the plan and has created conflicts between property owners that may or may not want their property affected by a proposed major thoroughfare. It has been well-recognized that the final and precise location of a major thoroughfare on a specific tract of land can enhance adjacent property value and increase the speculative potential for all types of development, particularly high-value commercial and business developments. As a result of this situation, some land owners, investors, and others in the real estate business actively seek to have proposed major thoroughfares located within their properties, or seek changes in the Commission's plan in order to secure a major thoroughfare location within their property.

This situation causes some property owners to dedicate major thoroughfare right-of-way through their property by separate instrument, without any intention of constructing the road, rather than incorporating such dedication within a subdivision plan approved by the Commission. The Planning Department staff discourages this practice, and it must be noted that this type of dedication, while a significant action, does not bind the City or County, or the Planning Commission. The Commission certainly must consider this fact in any future proposals to develop the adjacent property or to revise the plan in a manner that would affect the previous dedication, but the Commission should not bias its decisions related to the maintenance of a viable plan on the basis of separate-instrument dedication of rights-of-way where no pavement has been installed.

B. General policies

The following statements reflect the general policies historically followed by the Planning Commission in their administration and maintenance of the MTFP:

1. Attitude and position of the Commission

The basic and underlying attitude of the Commission in the administration, application, and interpretation of the MTFP is to be fair and impartial to all parties concerned, to provide an open forum for the free discussion of all aspects of any proposal regarding the application or interpretation of the plan, to play no favorites, to render only those decisions that will be in the best interests of the general public, and to maintain the theories and concepts which are the basis of this plan.

2. Location criteria

(a) In general, the preferred location for a major thoroughfare is through a tract of land allowing for development to occur on both sides of the thoroughfare rather than along a property line. This policy allows the developer to have continuous control over the development on both sides of the thoroughfare so that the development of the thoroughfare will be an integral part of the design and layout of the overall street system within the tract and to effect economies in

the engineering, design and construction costs involved. Obviously, there are instances where the location of the proposed thoroughfare must fall upon a common property line and in this case, it is most desirable that the adjacent landowners agree to participate in the construction of the thoroughfare at the same time.

(b) In those instances where the designated major thoroughfare falls upon an existing road or street having insufficient right-of-way (less than 100 feet), it is the usual policy to require the adjacent property owners, if they have submitted a plat to the Commission for approval, to dedicate their proportional share of the widening of the right-of-way to bring the right-of-way width to 100 feet. In some cases, because of existing development or other physical factors, all of the necessary widening may be required to be taken from one side of the street only.

(c) The location and alignment of proposed major thoroughfares should always be based on the relationship of the pattern of land parcels, and problems associated with the crossing of pipelines, bayous, radial streets and highways, and railroads, in order to prevent the creation of awkward land parcels, such as long narrow pie-shaped parcels or parcels too shallow for reasonable development.

(d) The development ordinance specifies the geometric standards relative to major thoroughfare right-of-way widths, curve radii, tangent lengths and block lengths. These standards are based upon nationally accepted criteria for this type of roadway with design speeds from 35 to 50 miles per hour and traffic volumes from 20,000 to 50,000 cars per day. As previously stated, the paving design policy of the City of Houston for major thoroughfares involves concrete pavement with storm sewers and provides dual 2 or 3-lane roadways separated by an esplanade containing protected left-turn lanes at selected intersections where significant left-turn movements are anticipated. The minimum acceptable centerline curve radius is 2,000 feet; however there may be situations where the centerline radius may be reduced. It has long been the policy of the Planning Commission not to accept any centerline radius on a major thoroughfare less than 1,150 feet and such a reduction from 2,000 feet is to be approved only after a complete review by the Traffic and Transportation, Public Works and Engineering, and Planning Departments and a determination rendered that there are compelling reasons, in the public interest, to accept less than the standards set forth in the Commission's rules. Reverse curves are to be separated by a tangent distance of not less than 100 feet, and the maximum allowable block length along major thoroughfares is 2,600 feet. Multiple intersections along major thoroughfares are also discouraged in order to facilitate smoother traffic flow and reduce the potential for accidents.

(e) Minor changes in alignment are considered to be those apparent differences in the actual alignment illustrated on the MTFP and the precise alignment drawn at a large scale as part of a subdivision plat submitted to the Commission for approval. It is the general policy of the Commission to consider changes in alignment internal to a given land parcel to be minor and approval can be granted

without resorting to the public hearing process. Obviously, such proposed changes must be viewed upon their individual merits and the staff and Commission must exercise their judgment in this regard. If, however, there is any doubt about the appropriateness of any such proposed change or its effect upon the plan or any other property owner, the commission has taken the position that a public hearing should be required prior to any action to approve the proposed location of the thoroughfare within a specific tract of land.

(f) Major changes in alignment are considered to be significant differences in the actual alignment illustrated on the MTFP and the precise alignment drawn at a large scale which affects the general pattern of thoroughfares established in the area and affects land owners beyond the specific tract submitted to the Commission for approval or any change which would involve the removal of the previous major thoroughfare designation from an existing road, or the incorporation of an existing road in the planned alignment of a major thoroughfare. Proposals that are determined to be major changes in the plan can only be approved through the required public hearing process. No changes in the plan should frustrate the general pattern of thoroughfares previously established, violate the plan's historic integrity, or affect the theories and concepts that are the basis of the plan's design. The burden of proving the compelling reasons and public benefit of any proposed change in the plan rests with the parties requesting such a change.

(g) Notification of the public hearings to be held by the Planning Commission on proposed changes to the MTFP is required by law. As pointed out in Section III within, the Commission must publish a notice of any public hearing in a local newspaper, not less than 15 days in advance of the hearing date and this notice is the only notice required. Although only one notice is required, the policy of the Commission has been to publish such notices in the Houston Chronicle under the "Legal Notices" section and to run them for three consecutive days. In addition, when known property interests are affected by proposed changes in the plan, the Planning Department staff may also specifically advise these interests of the forthcoming hearing and seek their comments in this regard. Such individual notice by staff is not routinely performed and must be considered only as a courtesy and service when, in the judgment of the staff, appropriate in the public interest. Specific notification of all property owners affected by any proposed change in the MTFP is not required by law and is administratively unfeasible.

The administrative interpretation of this plan has been and must continue to be a fair, reasonable, and open process, void of favoritism or personal whim, dedicated to the preservation of the basic theories under which the plan is designed to operate. It is intended that those decisions, actions, or determinations will be made in the best interests of the general public.

DEFINITIONS

Level of Service

The ability of a roadway to handle traffic is a function of its design. Traffic volume counts are taken periodically at roadway locations (usually major thoroughfares) throughout Houston as part of an ongoing program to monitor city traffic.

Current traffic volumes for streets within the city limits were obtained from the City of Houston, Public Works and Engineering, Traffic Management and Maintenance Branch. Current traffic volumes for streets in Harris County were provided for by the Houston-Galveston Area Council. Projected traffic volumes for the year 2025 were obtained from the HGAC and are based on its regional growth model.

Traffic volumes vary throughout the day. Examining these variations in traffic volume is important because roadway design is based on the demand of peak-hour traffic, when the volume is highest. Traffic volumes also vary along segments of a single roadway. This means that the capacity needs of a roadway (its width, for instance) may vary, depending on proximity to traffic generators. A roadway intersecting a highway may need six or eight lanes to accommodate the higher volume of traffic turns onto the highway, while that same roadway may only need two or four lanes at another location.

Roadways generally are analyzed in terms of peak-hour volumes because that is when the roadways are at maximum operation. The peak hour generally constitutes 8 to 12 percent of the total daily traffic, and it is common to use 10 percent of the average daily traffic volume to represent the peak hour flow. The effectiveness of the roadway in maintaining an acceptable standard of traffic flow, given its design capacity, is evaluated in terms of its level-of-service (LOS). Level-of-service ratings use an alphabetic scale with “A” as most free-flowing and “F” as having severe congestion. The LOS is calculated by taking the peak hour flow (10% of the daily total) and dividing by the number of lanes of the roadway, and then applying the result to the following scale to assign the level-of-service:

LOS – vehicle trips per day

A	0-199
B	200-349
C	350-499
D	500-649
E	650-799
F	800 or more

For example, a four-lane road with 18,000 vehicles per day:

$18,000 \times 10\% = 1,800$ peak-hour; $1,800 / 4$ lanes = 450 per hour per lane = LOS “C”

Roadways with level-of-service “A” through “C” are desirable. Roadways with LOS “D” experience moderate congestion which is considered acceptable. LOS “E,” heavy congestion, and “F,” severe congestion, are usually addressed by increasing the number of traffic lanes and/or using other traffic control measures. Below is a further explanation of the characteristics of each level-of-service:

A: Primarily free-flow operations at average travel speeds—90 percent or more of the free-flow speed. Vehicles are completely unimpeded in their ability to maneuver within the traffic. Stopped delay at intersections is minimal.

B: Reasonably unimpeded operation at average travel speeds—usually about 70 percent of the free-flow speed. The ability to maneuver in the traffic stream is only slightly restricted, and stopped delays are not bothersome.

C: Stable operations. However, ability to maneuver and change lanes mid-block may be more restricted than “B,” and longer queues and/or adverse signal coordination may contribute to lower average travel speeds—about 50 percent of free-flow speed.

D: Small increases in flow may cause substantial increases in approach delay and decreases in arterial speed. Average travel speeds are about 40 percent of free-flow speed.

E: Significant approach delays and average travel speeds of one-third of the free-flow speed or lower.

F: Extremely low speeds below one-third of the free-flow speed. Intersection congestion is likely at critical signalized locations, with high approach delays resulting.

Projected Volumes

Roadway volume projections are obtained using a regional traffic model developed by the Houston-Galveston Area Council (HGAC). This model uses data from validated 1985 base year counts and 1990-and-later ground counts to make volume projections for 2025.

Summary

The Planning Commission has the authority and has assumed the responsibility of creating and maintaining a MTFP applicable within the City of Houston's jurisdiction for the guidance of the development of the street and highway network for this area, which will provide a high level of mobility and accessibility for a majority of the citizens, present and future, of this area.